

A57CE
Revision 2
DIAMOND
DA 42
May 16, 2006

Type Certificate Holder: Diamond Aircraft Industries GmbH
N.A. Otto-Str.5
A-2700 Wiener Neustadt
Austria

I. Model DA 42 (Normal Category), approved July 22, 2005

<u>Engine</u>	2 Thielert TAE 125-01, see Note 1 FAA Type Certification Data Sheet No. E00069EN	
<u>Fuel</u>	Jet A (ASTM 1655)	
<u>Engine Limits</u>	Maximum Take-Off, 2300 rpm Continuous Operation, 2300 rpm (Propeller shaft RPM)	
<u>Propeller</u>	2 MT Propeller Co. MTV-6-A-C-F/CF187-129 FAA Type Certification Data Sheet No. P19NE	
<u>Propeller Limits</u>	Diameter 74.0 in., +0.0 in., -2.0 in; (1870 mm, +0.0mm, -50mm) Low Pitch Setting 12° Feather Position 81° Start Lock 15°	
<u>Airspeed Limits</u>	Maximum Never Exceed Speed V_{NE} 192 KCAS, 220 mph Maximum Structural Cruising Speed V_{NO} 155 KEAS, 178 mph Design Cruising Speed V_C 155 KEAS, 178 mph Maneuvering Speed V_A (up to 3236 lbs / 1468 kg) 119 KEAS, 137 mph V_A (above 3236 lbs / 1468 kg) 122 KEAS, 140 mph Maximum Flap Extending Speed V_{FE} Full Flaps 110 KEAS, 127 mph V_{FE} Approach Flaps 135 KEAS, 155 mph Maximum Landing Gear Operation Speed V_{LO} 160 KEAS, 184 mph Maximum Landing Gear Extended Speed V_{LE} 192 KCAS, 220 mph	
<u>C.G. Range</u>	Forward c/g position (aft of datum): up to 3236 lbs. (1468 kg) 92.5 in. (2.35 meter) at 3935 lbs. (1785 kg) 94.5 in. (2.40 meter) Varying Linearly with weight in between Rearward c/g position (aft of datum): At 2756 lbs. (1250 kg) 95.3 in. (2.42 meter) At 3527 lbs. (1600 kg) and above 98.0 in (2.49 meter) Varying Linearly with weight in between	

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<u>Empty Wt. C.G. Range</u>	None	
<u>Reference Datum</u>	86.5 in. (2.196 meter) in front of leading edge of stub-wing at the wing joint	
<u>Leveling Means</u>	Floor of front baggage compartment levelled.	
<u>Maximum Weight</u>	Takeoff (Normal Category)	3748 lbs. (1700 kgs)
		3935 lbs. (1785kgs), see Note 9
	Landing	3748 lbs. (1700 kgs)
	Zero Fuel weight	3638 lbs. (1650 kg)
<u>Minimum Crew</u>	1	
<u>No. of Seats</u>	4	
<u>Maximum Baggage</u>	Front Baggage Compartment	66 lbs (30 kgs)
	Behind Rear Seats	100 lbs (45 kgs)
	Aft part of Baggage Extension	40 lbs (18 kgs)
	Whole aft baggage compartment together	100 lbs (45 kg)
<u>Fuel Capacity</u>	With Standard Fuel Tank	52 gallons (196.8 liters) total. 50 gallons (189.2 liters) usable.
	With Auxiliary Tank additional	27.4 gallons (104 liters) total 26.4 gallons (100 liters) usable
<u>Oil Capacity</u>	each engine	Maximum – 6.3 qts (6.0 liters). Minimum – 4.8 qts (4.5 liters) See Note 2, for specification of engine and gearbox oil see AFM
<u>Coolant</u>	Distilled water / Cooler Protection For more details see AFM, 7.01.05-E, Section 2	
<u>Maximum Operating Altitude</u>	18,000 feet. (5486 meters)	
<u>Control Surface Movements</u>	Aileron	trailing edge up 25°, ± 2°, trailing edge down 15°, +2/-0°
	Elevator	trailing edge up 15.5°, ± 0.5°, trailing edge down 13°, ± 1°
	Elevator Trim Tab:	+ 17°, ± 4° (nose up at elevator 10° up) - 35°, ± 4° (nose down at elevator 10° up)
	Rudder:	left 27°, ± 1° / right 29°, ± 1°
	Rudder Trim Tab:	+ 34°, ± 4° (trim RH at rudder 20° LH) + 18°, ± 3° (trim LH at rudder 20° LH)
	Flaps:	
	Cruise flap setting	0°, ± 1°
	Approach flap setting	20°, ± 2°
	Landing flap setting	42°, ± 1°
<u>Manufacturer's Serial Numbers</u>		
a) For aircraft produced at Diamond Aircraft Industries GmbH, N.A. Otto-Str. 5, A-2700 Wiener-Neustadt Austria, eligible serial numbers are 42.004 and subsequent		
b) For aircraft produced at Diamond Aircraft Industries Inc., 1560 Crumlin Sideroad, London Ontario N5v 1S2, Canada, eligible serial numbers are 42.AC001 and subsequent		

Import Requirements

- a) For aircraft produced in Austria, a United States airworthiness certificate may be issued on the basis of an Austrian Certificate of Airworthiness for Export signed by a representative of the Austro Control Group (ACG) on behalf of the European Community, containing the following statement (in the English language): 'The aircraft covered by this certificate has been examined, tested, and found to comply with U.S. type certificate No. A57CE and to be in a condition for safe operation.'
- b) For aircraft produced in Canada, a United States airworthiness certificate may be issued on the basis of a Canadian Certificate of Airworthiness for Export signed by a representative of the Transport Canada Civil Aviation (TCCA), containing the following statement (in the English language): 'The aircraft covered by this certificate has been examined, tested, and found to comply with U.S. type certificate No. A57CE and to be in a condition for safe operation.'
- c) The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c).
- d) The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country of manufacture (e.g., third party country) is FAR Section 21.183(b) or 21.183(d).

Certification Basis

Type Certification under 14 CFR Section 21.29 including the following requirements:

- Joint Aviation Requirements (JAR) 23, Amdt. 1, dated February 01, 2001.
- NOTE: The DA 42 was certificated using the FAA/JAA validation certification procedures. A list of Significant Regulatory Differences were addressed. Therefore, the certification basis is equivalent to 14 CFR Part 23 effective February 1, 1965, including Amendments 23-1 through Amendment 23-55.
- 14 CFR Part 36 effective December 1, 1969, including Amendments 36-1 through Amendment 36-24.
- Special Conditions:
- 23-167-SC applicable to the Model DA 42 for Protection of Systems for High Intensity Radiated Fields.
- 23-169-SC applicable to the Model DA 42 for Diesel Cycle Engine Using Turbine (Jet) Fuel.

Equivalent safety Items:

Equivalent Levels of Safety findings made per the provisions of 14 CFR 21.21(b)(1) for:

- Equivalent level of safety ACE-05-05 applicable to the Model DA 42 for Ignition Switches with the Thielert TAE-125-01 Diesel Engines.
- Equivalent level of safety ACE-05-06 applicable to the Model DA 42 for Cockpit Controls and Motion and Effect of Cockpit Controls with the Thielert TAE-125-01 Diesel Engines.
- Equivalent level of safety ACE-05-07 applicable to the Model DA 42 for Liquid Cooling with the Thielert TAE-125-01 Diesel Engines.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) is listed in the Airplane Flight Manual and must be installed in the airplane for certification.

In addition, the following items of equipment are required:

Airplane Flight Manual, Document No. 7.01.05-E, dated 01-Dec-2004.

Maintenance Manual (including Airworthiness Limitation), Document No. 7.02.01, dated 01-Dec-2004.

- NOTE 1: Engine part number of TAE 125-01 approved for installation in the DA 42 is 125-01-(017)-(), with approved firmware and mapping according to DAI MSB 42-007, always latest issue.
- NOTE 2: Weight and Balance:
- A current weight and balance report including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.
- The certificated empty weight and corresponding center of gravity location must include full oil, coolant and unusable fuel.
- NOTE 3: The placards specified in the EASA approved Airplane Flight Manual must be displayed.
- NOTE 4: Approved for VFR and IFR only. Operation in Icing conditions prohibited.
- NOTE 5: For approved software versions of Garmin G1000 Integrated Avionics System, see DAI MSB 42-008, always latest version.
- NOTE 6: Instructions for Continued Airworthiness and Service Life Limited components is included in the Maintenance Manual Document No. 7.02.01. (Revisions to Airworthiness Limitations must be approved by the FAA)
- NOTE 7: Exterior color is limited to that specified in Diamond Document No. 7.02.01.
- NOTE 8: Major structural repair must be accomplished at a FAA certified repair stations rated for composite aircraft structure work, in accordance with Diamond repair methods approved by ACG and accepted by FAA.
- NOTE 9: The maximum takeoff mass of 3935 lbs.(1785 kgs) is approved if major Change MAM 42-088 is installed.
- NOTE 10: Approved major changes on Diamond DA-42 are:
MAM 42-046 Rough field Operations, Level 2
MAM 42-088 Increased gross weight, Level 1
MAM 42-101 New engine instrument marking, Level 2
OAM 42-056 Auxilliary tank, Level 1

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